

Direct Examination of Dr. Paul White

Hello, I am Dr. Paul White, and I am the Director of ERS Group in Washington, D.C. ERS Group is a consulting and research firm whose professionals work with individuals, government agencies, universities, corporations, and other businesses to analyze various employment decisions.

In this case, my firm was retained by the City of Nashville to do two things: (1) review the analysis of Dr. Michael Moomaw, the Plaintiffs' expert witness from whom you just heard testimony and (2) conduct an analysis of employee advancements (or promotions if you will) as well as employee compensation levels at Nashville's Water Services Department, or Water Department as you will hear me refer to it. I did both these things and I prepared a formal report that contains all of my findings. You will be able to take a look at my report and I will highlight some of its contents here today.

At the very beginning, I would like to describe for you the importance of knowing what one should expect statistically when looking at promotions and compensation in workplaces where all employees are treated the same without regard to race:

- 1) For promotions, we expect that the African-American percentage of people who are promoted is about the same as the African-American percentage in the workforce. For example, if African-Americans make up 25% of the workforce, then we expect about 25% of those who are promoted to be African-American.
- 2) For compensation, we expect that when we compare the average compensation levels of African-Americans to the average compensation levels of Caucasians with similar experience and pay grade, the compensation levels should be about the same.

What we'll do is look at what actually happened compared to what we expect to happen.

Before we start digging into the results of my review of Dr. Moomaw's report and my independent analysis, I'd like to describe for you the general structure of the compensation system in the Water Department. There are five "pay types." First, there is the Standard Range, or SR, which has a wide variety of jobs such as clerical and Engineers. Positions with worker responsibility are in the TG pay type. Then, there are those with lead responsibility who fall in the TL pay type. Then, there are those with supervisory responsibility who fall into the TS pay type. Finally, there is DP, which includes only the Director. There has only been one Director during the years at issue in this case. Generally, other than a slight decrease in the TL pay type from 1999 to 2005, the percentage of African-Americans employed in all other pay types has increased over time.

Now to the specifics of my employment analysis of the Water Department. Again, I analyzed two types of employment decisions – compensation and advancements. Specifically, I determined whether there were any patterns of "statistically significant" differences between the

compensation and advancement rates of African-Americans and Caucasians in the Water Department.

Statistical significance is a term you will hear me use a lot. In a nutshell, what it means is this: When we are comparing numbers between African-Americans and Caucasians in this case, we don't require the numbers to be exactly the same. In fact, it would be very difficult for any employer to have the average African-American and the average Caucasian salary to be exactly the same, down to the penny. Differences between African-Americans and Caucasians are allowed as long as the differences are not "too large." If a difference is "Statistically Significant" then it is too large.

As an example, if you flip a coin 100 times, you would expect to get "heads" 50 times and "tails" 50 times. But we all know that we don't get 50 "heads" and 50 "tails" every time we do this. Sometimes we may only get 45 "heads" and 55 "tails" and that wouldn't be very surprising. But what if you flipped a coin 100 times and only got "heads" 5 times? That would be a very rare event and it may make you wonder whether there was something wrong with the coin. The statistics allow us to draw the line between what is a rare event and what is not unusual. A rare event is one that is statistically significant.

Going back to our earlier discussion, we may accept the 45 "heads" and 55 "tails" but we would likely think that 5 "heads" and 95 "tails" is a difference that is "too large" and that it probably didn't happen by random chance.

In this case, statistical significance is critical because we want to know whether African-Americans are promoted less than Caucasians and we want to know whether African-Americans are paid less than Caucasians. Using compensation as an example, if the difference between African-American compensation and Caucasian compensation levels is, say, \$100 per year, then that's usually close enough – and the difference can usually be explained by other things like seniority. However, if the average African-American compensation is, say, \$10,000 per year lower than the average Caucasian compensation, then that difference may be so large that it cannot be explained by other things like seniority. It would be considered a "Statistically Significant" difference.

Here is a preview of what I found: My analysis revealed that there are no patterns of statistically significant differences between the compensation and promotion rates of African-Americans and Caucasians in the Water Department.

Now, I'd like to talk about the specific tests that I ran and the results of those tests. For both salary and promotion rates, I conducted both a general analysis and a more specific analysis, controlling for certain variables. By "controlling for certain variables" I mean that I took into account some things, such as seniority and experience that often affect an employee's pay and advancement. For each of the tests, I examined a year-end snapshot for years 2000-2006. In other words, I looked at data for the people who were employed at the Water Department at the end of each year. I'll discuss the results of my advancements/promotions analysis first.

(1) Employee Advancement: Selection Pools Analyses.

I first conducted a “selection pools analysis” (which was the more general test for the employee advancements). It’s called a “pools” analysis because it takes a group of people and compares African-American and Caucasian promotions from that group. This “pools” analysis also compares the number of African-American promotions that actually occurred to the number we expect to occur. For example, if African-Americans made up 50% of the workers in a certain pay plan and grade, then we would expect that half of the promotions from that pool of workers would be African-American.

The first selection pools analysis is called the “Fisher’s Exact Test.” This test measured the difference in African-American representation among those in a particular group who “advanced” in a given year as compared to the African-American representation in that group at the end of the previous year. In other words, the test measured how many African-Americans advanced that year in relation to the total number of African-Americans overall. I found that there was no statistical significance adverse to African-Americans between the number of African-Americans who were actually promoted and the number of African-American promotions that would be expected based upon the overall African-American representation in the Water Department. In other words, my tests revealed that if a certain pay type and grade was occupied by 25 percent African-Americans, then about 25 percent of the advancements in that pay type and grade would typically be awarded to African-Americans.

For this more general analysis, I also ran another test called the Common Odds Ratio Test, which gave me an overall result across the Water Department. This test combines all the separate Fisher’s Exact Tests and provides results at the Pay Type level, as well as an overall bottom-line result across all years, pay types, and grades. The Common Odds Ratio Test results gave the same conclusion as the earlier tests – there were no statistically significant differences adverse to African-Americans in advancements compared to their Caucasian counterparts.

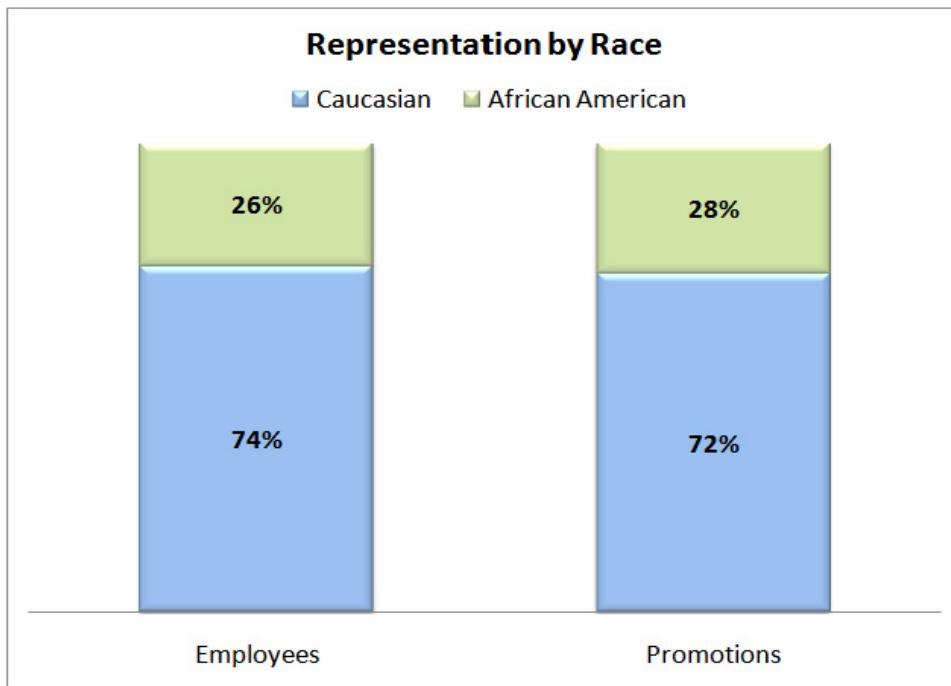
As you can see from this chart (attached hereto as Exhibit A), which is part of a table from my report, the Overall results of my selection pool analysis indicate that there is no statistically-significant difference in advancements for African-American employees. In fact, for the years that we studied, African-Americans advanced at a rate slightly greater than their representation in the workforce. You can see that during the time period we studied, African-American employees received 312 advancements and Caucasian employees received 814 advancements. Thus, African-American employees made up about 28% of all advancements. Considering the total number of African-Americans in the workforce, one would have expected to see only about 302 advancements by African-American employees but African-American employees actually received approximately 10 more advancements than that, 312.

My conclusions still held true when I considered only advancements within each pay type. For example, if you will look at this chart for the SR pay type you will see that, based on the representation of African-Americans in this pay type, we expected approximately 102

advancements for African-Americans and that African-Americans actually received 106 of those advancements.

All of my calculations for this analysis are provided as Appendix C to my formal statement, which you should review; I have only shown you the first page. If you review these charts, you will see that when we look at specific pay types within specific years, the overall results still hold true; there are no statistically significant results against African-American employees. In fact, if you look at the notation of ** at the bottom right-hand corner of the page, you will see that this particular result was statistically significant in favor of African-American employees; there were four African-American advancements where one would have expected only 1.41. As you flip through this appendix you will see that there are no instances where the number of advancements was statistically significant to the detriment of African-Americans. Had there been a statistically significant result against African-Americans, it would have the notation of only one * in the last column.

The below chart summarizes our findings across all of the Water Department:



(2) Employee Advancements: Logistic Regression Analysis

After I found no statistically significant detriment to the advancement of African-American employees in my previous test, I conducted a different, more specific, analysis of employee advancements, called a logistic regression analysis. The good thing about this type of analysis is that it allows us to compare more similarly-situated employees by creating a statistical model and controlling for certain variables. If we don't control for certain things, and compare "apples to apples" if you will, the results can be misleading. Therefore, a test like this logistic regression analysis provides a more refined picture than the more general analysis that I described earlier, because it lets you account for different variables that may affect when a particular employee is

promoted (like experience or seniority). Once you have accounted and controlled for these variables, you can better evaluate similarly-situated employees to determine whether African-Americans advance at a lower rate than their similarly-situated Caucasian counterparts.

For the logistic regression analysis, I again looked at a year-end snapshot for each year 2000-2006. For each year-end snapshot, I conducted a separate regression analysis for employees in each of the same pay types. Because we were testing advancements, the variable we focused on was whether the employee advanced (or was promoted) in the following year. The variables I controlled for were race, time in current pay grade, and Water Department experience prior to the current pay grade. As you can see from this chart (attached hereto as Exhibit B), for every year-end snapshot, none were statistically-significant against African-Americans. In fact, the only statistically-significant difference occurred in 2005 in the SR pay type where African-American employees had a statistically significant advantage for advancements.

(3) Base Salary Comparison of Averages

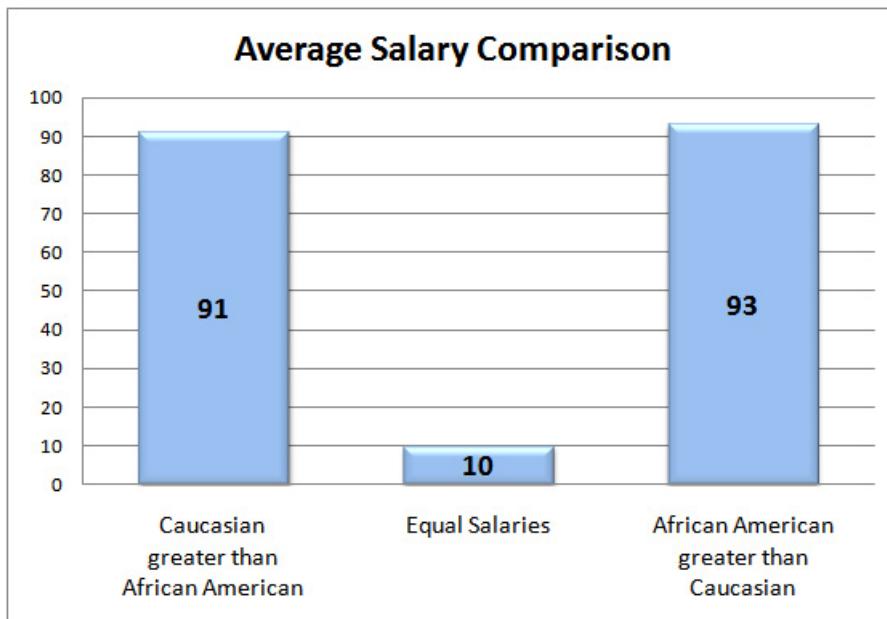
Third, I will discuss my analysis of compensation for Water Department employees. For the general analysis, I conducted a “t-test.” This test generally compares the average base salary for African-Americans as compared to the average for Caucasian employees. This test determines whether there are statistically significant differences in salaries between African-American and Caucasian employees.

I conducted a separate “t-test” analysis for each year-end/pay type/pay grade combination. In other words, I compared the pay for African-American and Caucasian employees with the same pay type and grade in a single year (2000, 2001, 2002, 2003, 2004, 2005, and 2006).

I conducted this analysis on 149 different combinations of years, pay types, and pay grades. 135 of these combinations showed no statistically significant difference in favor of either African-Americans or Caucasians. There were a handful of instances where there were statistically significant results adverse to either Caucasians or African-Americans. 6 instances showed statistically significant results adverse to African-Americans, and 8 instances showed results that were statistically significant and adverse to Caucasians.

Further, I also considered the results of this test once “statistical significance” in the technical sense was eliminated as a consideration altogether. In other words I just looked at which group had a higher average salary. In 91 instances, the average compensation of Caucasian employees was greater than African-Americans. On the other hand, in 93 instances, the average compensation of African-Americans was greater than Caucasians. In 10 instances, there was no difference.

The below chart summarizes these findings:



(4) Base Salary Regression Analysis

Finally, I will discuss the results of my regression analysis for compensation. Like I did with the advancement analysis we discussed a few minutes ago, I also conducted a regression analysis for compensation. You will recall that this is the type of analysis that allows you to account for different variables that may affect an employee's compensation, such as experience and seniority. Again, this is the more specific analysis that allows us to more closely compare similarly-situated employees and it therefore provides a more refined comparison of the compensation for African-American and Caucasian employees.

To conduct this analysis, I created a statistical model and conducted a separate regression analysis for each pay type. Because we were testing compensation, we are looking at things that affect each employee's annual pay rate. I controlled for race, time in current pay grade, Water Department experience prior to current pay grade, and pay grade. The reason for controlling for these things, again, is because these experience measures may have a huge impact on a particular individual's pay rate; employees with more experience and seniority are generally paid more. The question is – are African-Americans and Caucasians who are similar to one another in these characteristics being paid the same? I found that they are.

As you can see from this chart (attached hereto as Exhibit C), my regression analysis of compensation evaluated 28 combinations of years and pay types to determine whether the compensation rates of employees with similar experience and seniority received similar pay, regardless of their race. Of these 28 tests, 27 revealed that there were no significantly significant differences in compensation between African-American and Caucasian employees with similar seniority and experience. In fact, my analysis revealed only one instance of statistically significant difference in compensation in 2002.

So you're asking yourself what does all this mean? Recall at the beginning of my testimony that we were going to focus on what to expect from an employer where both race groups are treated the same. Specifically, we said that:

1. For promotions, we expect that the African-American percentage of people who are promoted is about the same as the African-American percentage in the workforce. For example, if African-Americans make up 25% of the workforce, then we expect about 25% of those who are promoted to be African-American.
2. For compensation, we expect that when we compare the average compensation levels of African-Americans to the average compensation levels of Caucasians with similar experience, salary plan, and pay grade, the compensation levels should be about the same.

In a nutshell, I ran the numbers four different ways and found that this was the case at the Water Department. The promotion rates of African-Americans at the Water Department are about what we would expect, given their representation in the workforce, and the compensation rates of African-Americans and Caucasians are about what we would expect for people with similar levels of seniority and experience. We were unable to find a pattern of statistically significant disparities between African-American and Caucasian employees of the Water Department in terms of advancements and compensation. In other words...

(1) African-Americans were promoted at the Water Department at a rate that is consistent, and slightly over, what would be expected, given the number of African-Americans employed.

- This result is the same if we look at the data
 - By pay type/pay grade/year
 - With and without the additional controls for important factors like seniority

(2) African-Americans were compensated the same as Caucasians who were at the same place in the Water Department's compensation structure.

- This result is the same if we look at the data
 - By pay type/pay grade/year
 - With and without the additional controls for important factors like seniority

Again, there was no pattern of statistically-significant differences between African-Americans and Caucasians for promotions or for compensation.

I'd like to wrap up today by highlighting a few of the concerns I had with Dr. Moomaw's testimony. You may recall that Dr. Moomaw testified about the percentages of African-

Americans and Caucasian employees in various pay grades and pay types at the Water Department. There are a few things he overlooked which make his conclusions misleading.

First, Dr. Moomaw presented many different percentages in his tables. He overlooks the fact that the percentages of employees in certain areas are affected by many different decisions, some of which are made by the employee and not the employer. For example, the percentage of African-Americans in his tables is determined by many things other than promotions, such as:

- New hires - People who apply for the jobs from outside of the Water Department
- Whether someone had minimum qualifications for a job
- Lateral transfers
- Demotions
- Voluntary separations - People who leave the Water Department on their own
- Involuntary separations - People who are fired from the Water Department

All these things are going on (and some are by the employee's choice). I did a separate analysis on promotions, but Dr. Moomaw didn't do a separate analysis for any of these specific employment decisions.

Second, he did not control for any of the obvious non-discriminatory factors that we have mentioned. He did not control for experience or seniority, two of the things I did control for in my report. In other words, he did not even attempt to compare apples to apples. Dr. Moomaw did not take into account the seniority or experience of the groups of employees he compared. In my opinion, this was a mistake because, as we have already discussed, the statistical results can be misleading if they do not take into account fundamental nondiscriminatory factors that affect an employee's pay, such as experience and seniority. Dr. Moomaw did not compare apples to apples; he just compared raw numbers of African-Americans as compared to Caucasians.

Third, Dr. Moomaw did not compare any of the percentages within the Water Department workforce to the percentages in the labor market outside of the Water Department. In other words, he does not account for the possibility that the percentages at the Water Department are similar to the percentages among the people who apply and are qualified to work at the Water Department. His calculations offer no means of comparison and, thus, are misleading.

To wrap up everything we've covered here today, my regression analyses, unlike Dr. Moomaw's, compared apples to apples by controlling for important factors that can affect one's compensation or promotion rates, such as experience in the Water Department. Those tests revealed no patterns of statistically-significant results adverse to African-Americans. In some instances, there were statistically-significant results in favor of African-Americans.